THE SCIENTIFIC STUDY OF MARKETING

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The words "scientific" and "principles" are much heard in business today, in its practice and especially in its teaching. Some years ago it might have been proper to discuss the possibility of teaching business and the existence of principles in business. Time has answered both queries. Business is being taught and principles of business are being disclosed.

Business principles are sometimes confused with business saws. "Early to bed and early to rise" and "Save your pennies," or even "Goods well bought are half sold" could by no stretch of the imagination be called business principles in the scientific sense of the word principle. Scientific connotes a basis of organized knowledge, and principle connotes at least a fairly definite relation between antecedents and results. On the other hand, such generalizations as—the nearer an inventory is to its raw material stage the better basis of credit it is, or, when stock-turns are fewer depreciation cost is apt to be greater,—are nearer our understanding of principles.

When enough precedents of marketing are accumulated to show that with some facts ascertained as to whether an article is a specialty or a staple, what its unit of sale is, what its capacity for repeat orders is, and so on, certain broad policies as to the methods of marketing this article can be laid down, then certainly an approach is being made to an organized body of knowledge. And if it is possible to go still further in the field of marketing and in the division known as retailing, show by inductive study that one of the first rough tests of efficiency in a retail store is the annual sales of the average salesperson and still further establish that at present in the retail shoe business in a city of more than 100,000 population this annual average should be about $10,000 and furthermore that the rent should not exceed 5 per cent and can be reduced to at least 3 per cent of the net sales, then indeed there is being provided a still more definite body of knowledge from which principles can be established.

The two great divisions of business are the making of things and the buying and selling of things. These are the central activities—production and marketing. The other functions of business, for example, accounting, banking, transportation, insurance, are functions auxiliary to these central activities—important, most important, but auxiliary.

In the field of production, of course, the body of knowledge is on the whole better organized and more precise. The various systems of management relate more to production than to marketing. Though a vast field for research, marketing has had comparatively little scientific study. It has not seemed particularly susceptible to scientific study. It abounds in the human equation. This does not mean that much ability has not been expended on this field not only in studying and inciting demand but also in recording performance. Map and tack systems, quotas and bonuses, selling costs and carefully prepared statistics of various kinds have for a considerable period been employed by the most progressive selling organizations. These internal statistics have also been accompanied by external statistics affecting and reflecting market conditions. But in the last analysis, the figures finally used in marketing, however obtained, are based on the law of averages, frequency, or proportion; the standards set, no matter how carefully and specifically adjusted, are in the last analysis averages, modes, or proportions and apply en masse rather than in detail. Again this does not mean that these data are not regarded as most valuable, as, indeed, the later statement of research work will show. A great problem in marketing is to get down beneath the law of averages and types. Production is so much more specialized and standardized, so much more precise than marketing that it is possible, given certain facts of material, dimension, and design, to set a maximum time for the performance of a certain specific operation. The appliers of scientific management have, furthermore, shown the possibility of determining a minimum time for this operation with conditions continuing the same and of prescribing the means whereby this minimum time need not be exceeded. In other words, the scientific manager in production can not only tell William Jones how long he should be in machining a certain part, but can furnish him with the best feeds and speeds to employ in doing the work in the time specified, and if the methods and time apply in Philadelphia

it is presumed that they will also apply in Boston. But in marketing, no manager, no matter how able and experienced, would attempt to tell Thomas Smith how long he should be in selling a pair of shoes to William Jones, nor to give more than general instructions as to the best way in which to do the selling. About the best this manager has been able to do is to say that in a week, on the average and according to the season, Thomas Smith should sell so many dollars' worth of shoes. In machining the part, the conditions are more standardized, the operation more specialized, the human factor is less and is more under control. In selling the shoes, the opposite is true. In production, the time for an operation can be measured by minutes and less; in marketing, I have encountered no practical use being made of units of less than one week.[1] This warrants the consideration for a moment of certain fundamental differences between production and marketing, bringing out why in business some men grow up on the "selling side" and some on the "manufacturing side."

These differences may be balanced against each other as follows. In production, men meet only as members of the business—as subordinates, peers, or superiors. Neither the customer nor the competitor is encountered directly. In marketing, on the other hand, men are in contact, not only with the other members of the business, but also with the customer to serve and the competitor to meet.

In production, the problems are likely to be more those of cost—material, labor, and overhead. In marketing, the attention is more focussed on price. Knowledge of cost is not particularly essential. The market is fixing values outside of the businesses' control. Emphasis is also likely to be laid on quality and service.

In production, the problems on the whole are internal. In marketing, the problems on the whole are external. Competition

[1]In all the foregoing the differences cited are more differences in large degree, than narrowly in kind. For example, time studies are themselves usually modes or averages or both, and allowances have to be made according to the character of labor of a community. And in marketing, on the other hand, the practice in large markets of having salesmen say nothing about the goods but simply answer and serve, and the abolition of the sales slip in the 5 and 10 cent store are steps toward production methods in marketing. Despite these theoretical similarities, the differences in fact in operation and result between production and marketing are as stated.

is on every hand. The market is to be analyzed. In production, there is probably for the individual business a possibility of greater independence of action. Marketing is probably more hedged about by the customs of the trade. In other words, as said before, marketing abounds in the human equation.

Another illustration of these differences can be taken out of the shoe industry from the manufacturing and marketing sides respectively. In the manufacture of shoes in general, the unit of measure employed in determining the output of the workman is the pair, or multiples of the pair. That is, a physical unit, a quantitative unit, is employed.

In the marketing of shoes, wholesale or retail, in general, the unit of measure employed in determining the output of the salesman is the dollar, the value of the sales. That is, a unit of value, a qualitative unit, is employed. It has been suggested, however, that the proper unit on which to calculate the retail salesman's efficiency and wages, as well as other expense, is also the pair. And this has been further supplemented by one with experience in production, who says that marketing is but a continuation of production only with the addition of utilities more in the nature of place and service than of form, and that the store salesman makes *sales* just as the factory worker makes *shoes*. The test of efficiency of the salesman, he says, is the number of sales, just as the test of the efficiency of the factory worker is the number of pairs, and when asked if salesman A selling 15 pairs of $3 shoes, or $45 worth, were more efficient than salesman B selling 10 pairs of $5 shoes, or $50 worth, in the same period, at once answered "Yes."

The true answer is that in the last analysis probably both the worker and the salesman are paid according to the value contributed by each to the shoes, only the contribution of the worker to each pair can be so exactly measured that the pair and multiples of the pair become the more convenient accounting unit. But the salesman's operation has not been so standardized. Greeting the customer, learning his wants, finding the shoe, fitting the shoe, closing the sale, starting the accounting on the sale, and the delivery of the goods are a whole series of operations more complex than skiving a shank or nailing a lift. Furthermore, in the latter operations the material and the machine have no personality—the operator only, whereas in the case of the salesman there is not only the unknown

quantity of the personality of the customer to reckon with but also the unknown interaction of the two personalities. So for the operations of the salesman the dollar which in itself is a common denominator becomes the more convenient accounting unit. And this very difference in units brings out most significantly the difference between production and marketing.

Scientific research then in marketing is evidently not an easy task, especially if scientific be given the same strict definition that it has in production. Of the importance of the subject marketing, however, there can be no question as a few facts will show. Forty per cent of the price paid by the ultimate consumer for a pair of shoes is consumed in getting the shoes to him from the manufacturer, exclusive of the manufacturer's profit, that is, in marketing them. For less staple commodities this percentage is yet higher, and even on so staple a commodity as groceries the marketing margin ranges from twenty-five to forty per cent. The idea is not that this margin is either proper or improper, but simply that it is a pregnant subject to investigate.

It accordingly was in the field of marketing that the Harvard Bureau of Business Research set to work. It decided to work by commodities, and for the first commodity, selected shoes as a staple regularly marketed by various methods—manufacturer to wholesaler, to retailer, to consumer; manufacturer to retailer, to consumer; manufacturer to consumer directly by mail or through owned retail stores. In the marketing of shoes, the division retailing was begun. The first concrete task was to ascertain the cost of retailing by securing as many individual retail costs as possible. Dearth of adequate records in many retail shoe stores and variations in bookkeeping in all of them necessitated the drafting of a uniform accounting system which has become standard in the shoe trade. Thus was the accounting variant removed. The great problem has been, of course, to remove as many variants as possible and get the marketing units on as near a comparable basis as possible; that is, to apply the standardization of production so far as applicable.

With the records of first 130 and then 650 stores adjusted to this system it has been possible to prepare normal and standard figures, some of which have already been referred to. The more

important figures were summarized in the bureau's Bulletin Number 1, as follows:

SUMMARY TABLE OF IMPORTANT FIGURES FROM THE RETAIL SHOE BUSINESS
NET SALES=100 PER CENT.

Item	Lowest percentage	Highest percentage	Percentage about which data centre (not an average)	Percentage about which a concentration is sufficient to indicate a realizable standard
Gross profit, including discounts	20	42	Low grade 23–25 High grade 30–33	
Total operating expense not including freight and cartage or interest	18	35	Low grade 23 High grade 27	Low grade 20 High grade 25
Buying expense	0.8	1.8	1.1	1.0
Salesforce expense	5.0	10.3	8.0	7.0
Advertising	0.0	8.8	2.0	1.5
Deliveries	0.0	1.4	0.6	0.4
Rent	1.8	14.6	5.0	3.0
Interest	1.0	7.9	2.5	2.0
Stock-turns, a year	1.0	3.6	1.8	2.5
Annual sales of average salesperson	$5,000	$16,500	$10,000	

The first two columns of this table show the range in the important figures of operation specified and the next two columns modes for these figures (not averages). The third column contains the mode for the whole group and the fourth column the mode for an efficient group large enough to be significant. The third column then may be said to provide a normal figure and the fourth column a standard—something to aim for. That these figures have served as standards for shoe retailers, resulting in reduction of expense, the bureau has concrete instances. This is not hard to understand when it is remembered that probably never before have the great majority of shoe retailers had any certain knowledge if their rent amounted to 7 per cent of their net sales that it should be 5 per cent, and could be 3 per cent in cities of over 100,000 population;

or that more than 8 per cent of the net sales is too much to pay for salesforce expense as defined by the Harvard System of Accounts for Shoe Retailers.

It is, furthermore, evident that there are variations in the operating expense of retail shoe stores of nearly 100 per cent (18–35). Preliminary studies of the retailing of other commodities, especially groceries, hardware, clothing and drugs, indicate practically as wide a variation. Just how far society, as represented by the consumer, is benefited by increased retail efficiency it is hard to say. But it does seem from observation in the retail shoe trade that a part of the saving in expense goes to the consumer in reduced prices. Even if the consumer does not benefit, for the stock of capital of society as a whole it is better to have this saving go into the retailer's profit than to have it largely consumed in marketing friction.

With still further data obtained from shoe retailers, the bureau expects further to classify and refine the above figures to detect the influence, if possible, of the important factors of the population of the community in which the store may be located, the grade of business of the store, and its volume of business.

At the same time, the research is being pushed back to the shoe wholesalers and the shoe manufacturers with or without stock departments. Also within a year an investigation of the marketing of groceries has been begun in a way generally similar to the shoe study. And already, though the same accounting system is being employed, conditions strikingly different in the retailing of these two commodities have been found. Some reference to those relating to stock-turn and depreciation cost will appear shortly in a bulletin on depreciation in mercantile businesses with special reference to the retail shoe business.

Costs are not the only subject of study. In fact, it might be said that just as the accounting system was an incidental necessity to the securing of costs, so the costs are an incidental necessity to the securing of the best practice. What, for example, is the best retail shoe practice? Should a shoe retailer buy from more or fewer sources? Should these sources be manufacturers or wholesalers or both? How much stock should he carry, and how should he determine it? In other words, cannot shoe retailing be made more scientific and economical, and how can it be made so?

Similar work will be done with the wholesaler and other agencies

of marketing and eventually with not only shoe and groceries, but with other commodities.[2]

But, after all, the material that has so far been obtained and is so far being sought by the bureau is really modes, whether of specific figures or of general practice. The bureau's schedule for shoe retailers states that, apart from the figures desired, the object of the general questions is "to bring out the character, experience, policies, and tendencies" of each store. The mode of the practices of stores with the most efficient records would be the best practice. Furthermore, these modes are based on a unit of time of not less than six months, and frequently a year is a still sounder foundation. And although a standard so based can be applied before the results it is measuring are six months old, still a considerable lapse of time is necessary before fruitful comparison can be assured.

In other words, the bureau, like the advanced selling organizations, is still dealing with averages and types, although through its non-competitive confidential position it has access to a much greater variety of experience. This work is worth while; it can even be called scientific in the sense that it is constructing an organized body of knowledge, but it is by no means scientific to the degree of the scientific management of production.

How far can the scientific management of production be applied to marketing? In production, the great fundamental problem is to determine the proper task. The storing, the routing, the greater standardization, the time studies, the improved methods and processes all relate fundamentally to the task, and this task once determined can be definitely reckoned on as long as the conditions remain unchanged, and these conditions either do not change or if they do their change can be measured and allowed for.

Similarly, in marketing, tasks are beginning to be searched for and set, but a very much longer unit of time is necessary and the given conditions change, and the change and its effect is difficult to estimate. If the bureau were to pursue the methods of scientific management in exact analogy it would take complete charge of a shoe store, measure every dimension, keep careful records of stock

[2] Further material of the Harvard Bureau of Business Research will be found in its own Bulletins 1–4, and some account of it has also appeared in the *American Economic Review* of December, 1913, and in *Papers and Proceedings of the American Economic Association*, March, 1915.

and sales, of salesmen and customers, correlate the selling more with buying, make the best selling stock most accessible to the fewest steps, take time studies of sales to various customers, and so on. As a result it might redesign and relocate the store, and change its buying and selling methods. Much could be done; much could be learned. How much would that knowledge apply to another store, and how much to the same store a year later?

What specialization and standardization are possible in marketing? How far can the experience of one section be applied to the methods of another? How much of the marketing problem is human and how much of this human factor is determinable and measurable? Must marketing always have its practice guided by general data, averages, modes, proportions—mass phenomena? What reorganization is desirable and possible in the present system of marketing, or is a new system developing? These are absorbing questions. Society has permitted a large margin for marketing cost and now society is investigating to see how this margin is used. Here is a tremendous field for research. Its potentialities are hard to overestimate.